

Status and Plans for Collecting and Distributing WSR-88D Data

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And

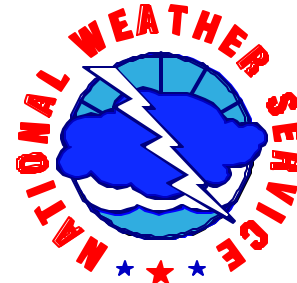
Bob Saffle

Mitretek Systems

17 June 2004

AMS 33rd Conference on Broadcast Meteorology

New Orleans, LA



New Capabilities Likely Coming To The WSR-88D

- Continued 6-Month Software Releases
- Open Radar Data Acquisition (Deployment 2005-2006)
 - Enables New Science (e.g.):
 - Extend Range Of Velocity Data Beyond 230 km
 - Improve Data Quality (Mitigate Range/Velocity Folding)
 - Enables Super Resolution Products For Tornado Detection:
 - 0.25 km Reflectivity, Vice 1.0 km
 - 0.5 Degree Azimuthal Sampling, Vice 1 Degree
- Dual Polarization (Deployment 2007 – 2009)
 - Improved Radar Based Precipitation Estimates
 - Improved Liquid/Ice Discrimination (Classify Precip Type)
 - Improved Data Quality (Identify Clutter, AP, Birds)

Potential WSR-88D Product Changes At The RPCCDS

- Increased Product Availability From DOD and FAA Radars
- Changed Product List
 - NWS Revalidating Requirements For RPCCDS Products
 - May Result In Reduction Or Addition Of Products
 - NWS Revalidating Level III Product List
 - May Result In Reduction Or Addition Of Products
 - NWS Will Survey External Users
 - Which Products Never/Rarely Used
 - Which Products Desired For Addition
 - Likely To Be A One For One Exchange Of Deleted Products And Added Products Due To NWS Hardware And Bandwidth Limitations

NWS Level II Real Time Data Collection & Distribution Network

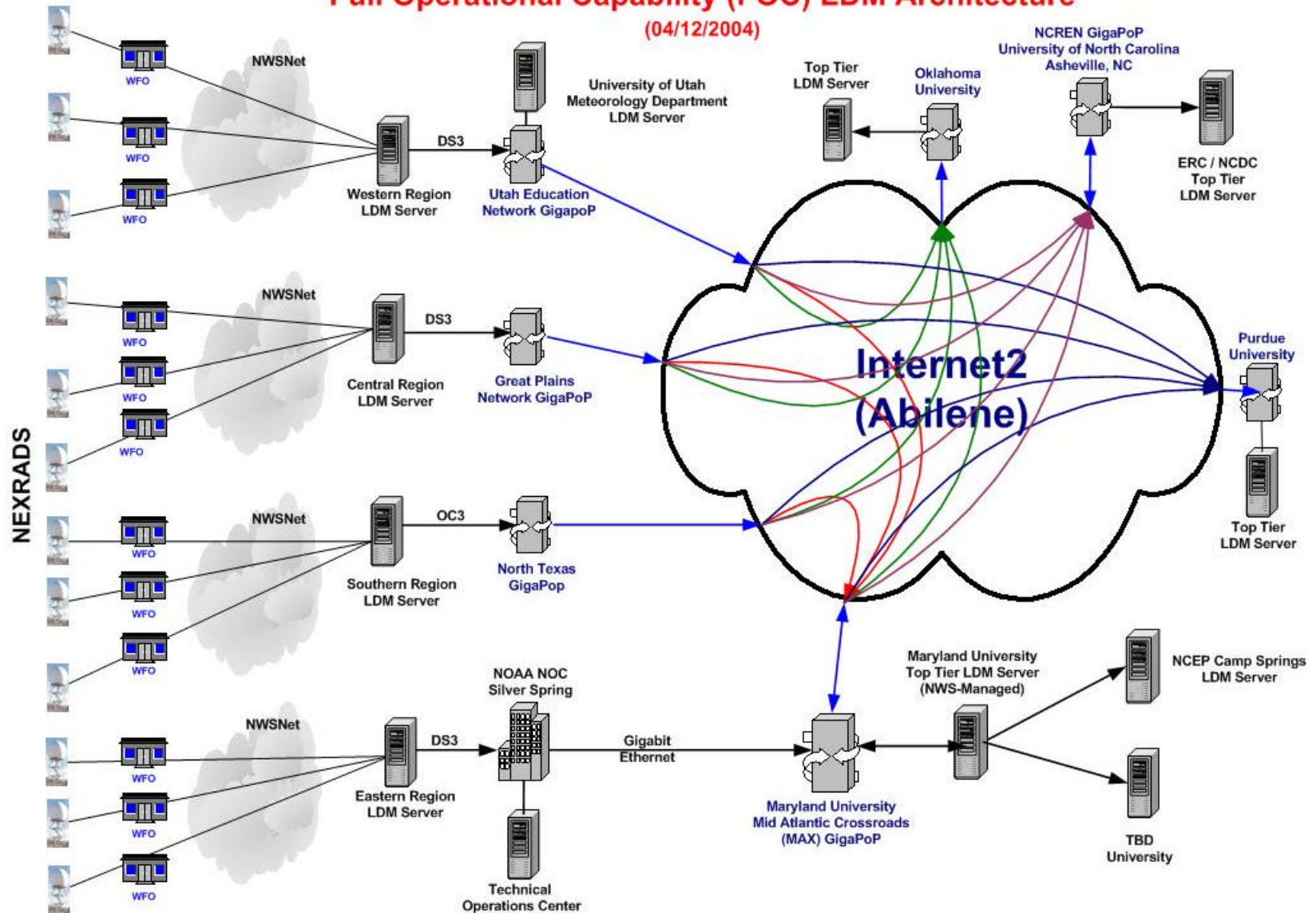
- At February 2003 AMS Annual Meeting, NWS Announced Plans For WSR-88D Level II Data Collection And Distribution Network
 - Build On Successful CRAFT Project
 - Meet NWS Requirements For Level II Data
 - Archive And Real-Time
 - Initial Operating Capability Achieved In February 2004
 - 124 Radars Available (All NWS and 3 DOD CONUS)
 - Data Availability Will Increase As NWS Builds Network Processes And Infrastructure
 - All Hardware And Software In WSR-88D Baseline
 - All Communications From Sites Via NWS Net

NWS Level II Real Time Data Collection & Distribution Network

(Continued)

- NWS Recently Announced 4 Top Tier Sites For Accessing Level II Data
 - University of Oklahoma
 - Purdue University
 - Educational Research Consortium Of The Western Carolinas
 - Possible NWS Family Of Services Option, If Sufficient Interest

Level II Radar Distribution **Full Operational Capability (FOC) LDM Architecture** (04/12/2004)



Level II Data Distribution Plans

(Continued)

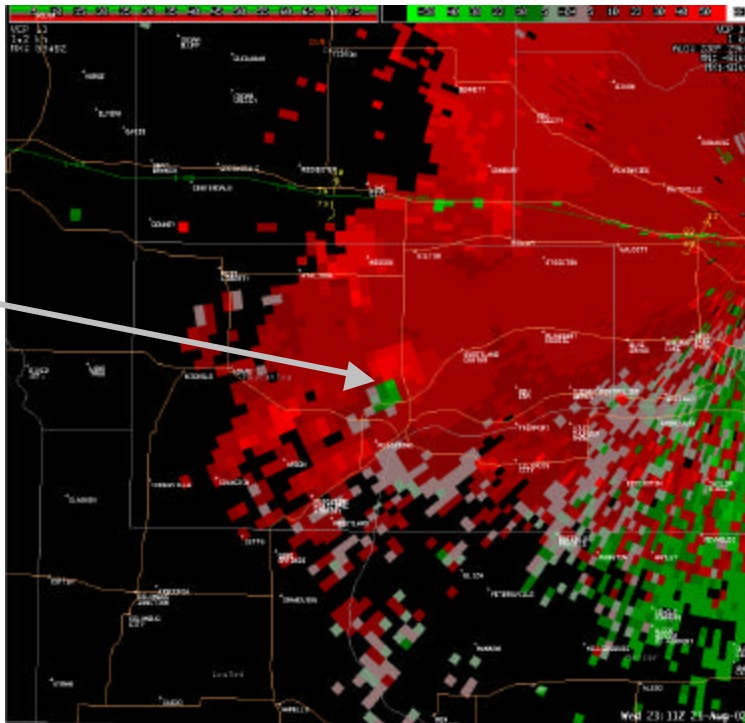
- Full Operational Capability By End Of 2004
 - All Sites Using Baseline WSR-88D Hardware And Software
 - Final Network Architecture And Monitoring In Place
 - Add 8 DOD CONUS Radars
- By March 2005, All 142 CONUS WSR-88Ds In Network
- NWS Policy Is Unrestricted Distribution And Use Of Level II Data
- Based On NEXRAD Agency Requirements, Super Resolution Data (Enabled By Open RDA) MAY Be Added To The Level II Data Stream Pending Business Case Analysis And Funding Availability
 - External Level II Users Will Be Informed In Advance

Example Of Base Product Velocity Using RPCCDS Resolution Vice Level II Resolution

Storm
Relative
Velocity
(legacy
RPG
product)

16 Data
Levels
1.0 km
resolution

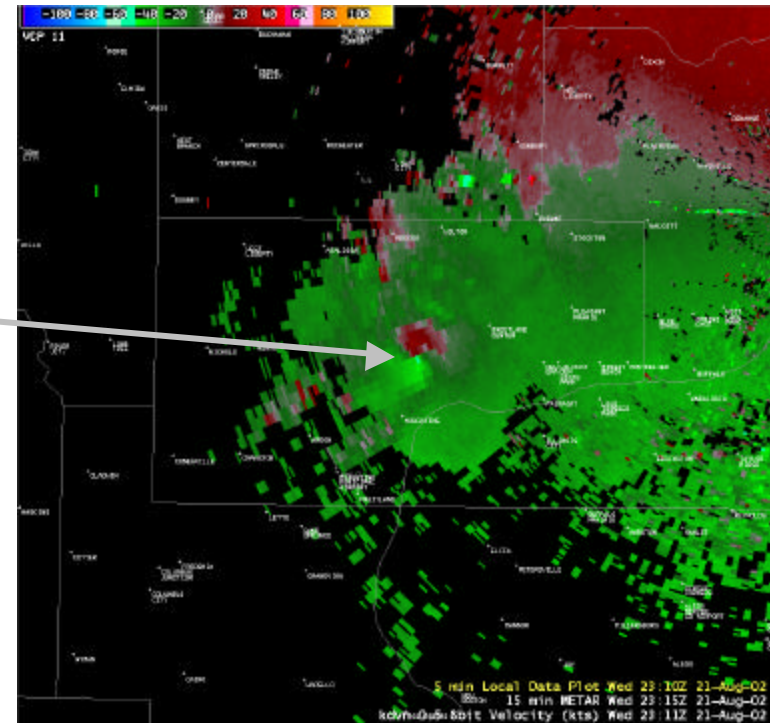
F1 Tornado
near
Muscatine



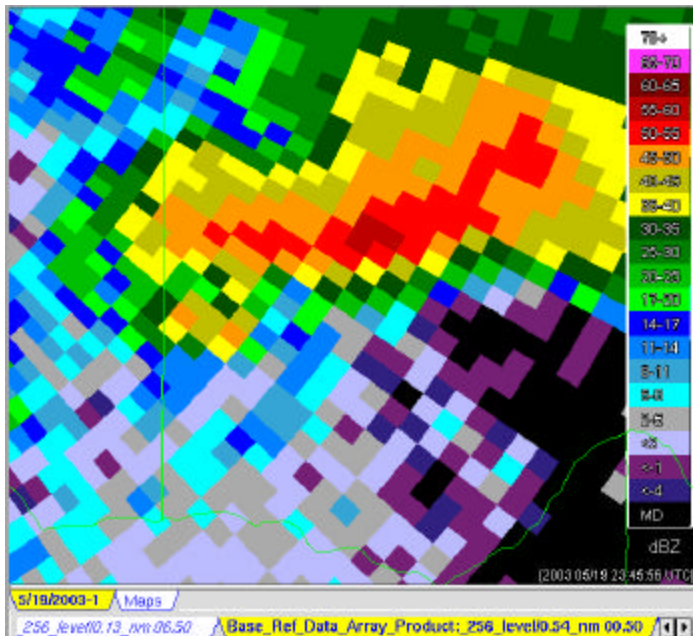
High
Resolution
Base
Velocity
(new ORPG
product)

255 Data
Levels
0.25 km
resolution

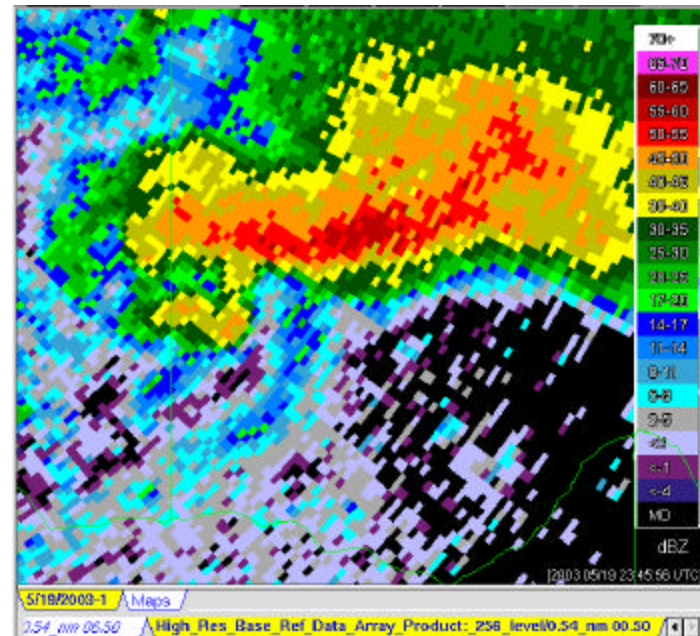
F1 Tornado
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Example Of Current High Resolution Level II Product And Potential Super Resolution Level II Product



High Resolution



Super Resolution

Summary

- Many Changes Occurring In WSR-88D Program Enables
 - More Data
 - Higher Resolution Data
 - Higher Quality Data
- Contents Of WSR-88D RPCCDS Data Stream May Change
- Real Time Level II Data Stream Available Now
- Possible Future Additions To Level II Data Stream